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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,740	06/18/2001	John G. McDonough	TI-31695	1761
23494	7590	03/27/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			WARE, CICELY Q	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	
			2611	

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,740

Applicant(s)

MCDONOUGH ET AL.

Examiner

Cicely Ware

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-15 and 17-45 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see REMARKS/ARGUMENT, filed 1/12/2006 with respect to the rejection(s) of claim(s) 1-4, 5 and 16 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yu et al. (US Patent 6,735,454).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storm et al. (US Patent 6,016,312) in view of Yu et al. (US Patent 6,735,454).

(1) With regard to claim 1, Storm et al. discloses in direct sequence spread spectrum (DSSS) communications, a method for recovering system timing, the method comprising (col. 1, lines 39-41, col. 3, lines 13-14, 25-26): disabling a reference clock during a sleep interval (col. 5, lines 50-53, col. 7, lines 63-67, col. 8, lines 56-61) ; following the sleep interval, enabling the reference clock (col. 5, lines 11-25, col. 6, lines 42-47, col. 7, lines 11-13, col. 9, lines 27-33); modifying the system timing by a ratio,

where the ratio is the reference clock frequency divided by the sleep clock frequency (col. 6, lines 1-6).

However Storm et al. does not disclose wherein the sleep clock frequency is adjusted for frequency drift.

However Yu et al. discloses wherein the sleep clock frequency is adjusted for frequency drift (abstract, col. 6, lines 22-26).

Therefore it would have been obvious to one of ordinary skill in the art to modify Storm et al. to incorporate wherein the sleep clock frequency is adjusted for frequency drift in order to compensate for the initial and final offsets to re-activate the high frequency clock to be re-activated based upon fractional portions of the low frequency clock (Yu et al., col. 4, lines 16-21).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Storm et al. further discloses measuring a reacquisition error; and wherein calculating the ratio includes calculating the ratio in response to the reacquisition error (col. 1, lines 51-59, col. 8, lines 33-35, col. 9, lines 52-58).

(3) With regard to claim 4, claim 4 inherits all the limitations of claim 3. Storm et al. further discloses prior to disabling the reference clock, determining the number of sleep clock periods in the sleep interval; and wherein disabling reference clock during the sleep interval includes disabling the reference clock for the determined number of sleep clock periods (col. 7, lines 11-13, 40-45, 63-67, col. 8, line 1).

(4) With regard to claim 5, claim 5 inherits all the limitations of claim 4. Storm et al. further discloses wherein determining the number of sleep clock periods in the sleep

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interval includes determining the number of sleep clock periods using the ratio (col. 6, lines 30-52, col. 8, lines 32-35).

(5) With regard to claim 16, see rejection of claim 1. Storm et al. further discloses measuring sleep clock frequency using an initial ratio (col. 5, lines 26-42); and determining a ratio in response to a previous ratio and the current ratio (col. 8, lines 32-35).

Allowable Subject Matter

4. Claims 6-15, 17-26, 27-45 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: The instant application discloses in a direct sequence spread spectrum communication system a method for recovering system timing. Prior art references show similar methods but fail to teach: **“the sleep clock and reference clock have nominal frequencies; wherein determining the number of sleep clock periods in the sleep interval includes multiplying the sleep interval, times the nominal reference clock frequency, times the inverse of the ratio as follows:**

$N_{\text{sleep}} = T_{\text{sleep}} \times f_{\text{ref}} \times (1/R)$

”, as in

claim 6; “weighting the importance of the current ratio and previous ratio in

response to the reacquisition error”, as in claim 17; “a controller having a third

input to receive reacquisition errors”, as in claim 27; “the ratio is a frequency of

the reference clock, base upon an average of the number of rising and falling

edges of the reference clock, divided by the frequency of a sleep clock", as in claim 45.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 571-272-3047. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Cicely Ware

cqw
March 17, 2006


KHAI TRAN
PRIMARY EXAMINER